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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PAPPAS, PETER	

ART UNIT	PAPER NUMBER
2671	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/772,446	BOURGES-SEVENIER, MIKAEL	
	Examiner	Art Unit	
	Peter-Anthony Pappas	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 24* is/are rejected.

7)☒ Claim(s) *20-23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 January 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/16/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "an interpolation engine configured to accept the control parameter and the timing signal from the interpolator node and reproduce a non-linear animation path, and to output a new animation value to the interpolator node for use in the scene description" (claim 20, lines 5-7) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: lack of antecedent basis. The specification discloses an interpolator node 402 in Fig. 4. However, element 402 of Fig. 4 is also identified as "Interpolator." Therefore, as disclosed said interpolator and said interpolator node are considered to read on the same element and thus results in a lack of support, in the specification, for the language disclosed in claim 20.

Appropriate correction is required.

Claim Objections

3. Claim 1 is objected to because of the following informalities: use of multiple periods. Appropriate correction is required.

4. Claim 10 is objected to because of the following informalities: lack of antecedent basis for the limitation "the initial value" (lines 5 and 6). Appropriate correction is required.

5. Claim 20 is objected to because of the following informalities: lack of antecedent basis for the limitations "the interpolator node" (line 6). Appropriate correction is required.

6. Claim 24 is objected to because of the following informalities: lack of antecedent basis for the limitation "the control points" (line 4). Appropriate correction is required.

Allowable Subject Matter

7. Claim 20 would be allowable if rewritten or amended to overcome the respective objections(s) set forth in this Office action.

8. The prior art of record does not disclose or suggest an interpolation engine configured to accept the control parameters and the timing signal from the interpolator node and reproduce a non-linear animation path, and to output a new animation value to the interpolator node for use in the scene description.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claim 24 is rejected under 35 U.S.C. 102(a) as being anticipated by Overview of the MPEG-4 Standard (International Organization for Standards).

11. In regards to claim 24 it is noted MPEG-4 was finalized in October 1998 and became an International Standard in the first months of 1999. The fully backward compatible extensions under the title of MEGP-4 Version 2 were frozen at the end of 1999 (page 1). The MPEG-4 Standard teaches that an MPEG-4 scene follows a hierarchical structure, which can be represented as a directed acyclic graphic, defined by parent (i.e. Fig. 9 – "person") and child (i.e. Fig. 9 – "voice" and "sprite") nodes (§ 8.5 Binary Format for Scene description: BIFS). Said nodes (control points) can be added , replaced or removed, via user interaction (§ 8.5 Binary Format for Scene description: BIFS and § 8.6 User Interaction). It is noted said hierarchical structure, represented as

a direct acyclic graph, is considered to define an order by which said graph can be traversed.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simons et al. (U.S. Patent No. 6, 115, 051), in combination with Haratsch et al. (U.S. Patent No. 6, 154, 222).

14. In regards to claim 1 Simons et al. teaches that the invention provides a computer-implemented method and apparatus for reparameterizing a parametric function (non-linear parametric representation) representing an animation feature in an animation system, where the parametric function is represent by a curve (column 1, lines 63-67), wherein said curve may be of the form of a cubic spline, a forth-order spline, a Bezier spline, a Hermite spline, or a concatenation of splines (column 2, lines 63-65). It is noted a cubic spline, for example, is considered to be non-linear.

A user defines a path (curve) Q in the property space that the object will follow between the starting and ending property states (column 2, lines 59-61). Object properties that may be animated include layer position, anchor points, effect point controls (control points) and color selection (column 2, lines 39-53).

Fig. 2A illustrates a segmented (sectioned) curve Q.

Simons et al. fails to explicitly disclose representing the non-linear parametric representation in the virtual reality scene descriptive language. Haratsch et al. teaches that the use of a standardized file format such as Virtual Reality Modeling Language (VRML) allows the use of commonly available modeling software to design animations.

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate the use of the VRML file format, for the saving of animation data, into the system as taught by Simons et al., because the use of a standardized file format such as VRML allows the use of commonly available modeling software to design animations, thus making said animation data stored in a VRML format to be more widely accessible for implementation (i.e. display) and further manipulation without limiting said data to a particular modeling software package.

15. In regards to claims 2 the rationale disclosed in the rejection of claim 1 is incorporated herein. See Fig. 2A.

16. In regards to claim 3 the rationale disclosed in the rejection of claim 1 is incorporated herein. See column 2, lines 63-65.

17. In regards to claim 4 it is inherent a Bezier curve is a cubic function.

18. In regards to claim 5 Simons et al. teaches Q(u) determines the location of the object on path Q (column 2, lines 62-63). It is noted function Q(u) is considered a scalar function, because said function comprises one or more variables (i.e. u) whose range is 1D.

19. In regards to claim 6 the rationale disclosed in the rejection of claim 1 is incorporated herein. See column 2, lines 39-53.

20. In regards to claim 7 Simons et al. teaches that the principles of the present invention are equally applicable to other animation features such as 3D object transformation (column 6, lines 66-67, and column 7, lines 1-4). Simons et al. fails to explicitly teach a 3D position representation for an animation path.

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to utilize a 3D positioning system when performing 3D object transforming, via said animation system as taught by Simons et al., because a 3D object is conventionally represented by three axes, X, Y and Z, in which said 3D object is defined as able to moved within, and thus to accurately define the position or path of said 3D object one would require the use of all three axes so to maintain the 3D properties of said object.

21. In regards to claim 8 Simons et al. teaches that for 2D space function Q(u) can be expressed accordingly (column 2, lines 59-67, and column 3, lines 1-8).

22. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simons et al. (U.S. Patent No. 6, 115, 051) and Haratsch et al. (U.S. Patent No. 6, 154, 222), as applied to claims 1-8, in combination with VRML International Standard ISO/IEC 14772-1:1997 (http://tecfa.unige.ch/guides/vrml/vrml97/spec/), herein referred to as VRML97.

23. Simons et al. and Haratsch et al. fail to explicitly teach wherein the non-linear parametric representation in the virtual reality scene descriptive language is transmitted to a remote unit where it is used to reconstruct the animation path. VRML97 teaches VRML is designed to be used on the Internet, intranets, and local client systems (Introduction). The interpretation, execution, and presentation of VRML files will

typically be undertaken by a mechanism known as a browser, which displays the shapes and sounds in the scene graph. This presentation is known as a virtual world and is navigated in the browser by a human or mechanical entity, known as a user (Concepts § 4.2.6 Presentation and interaction).

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate the means by which a given VRML file is distributed and executed, as taught by VRLM97, into the system as taught by Simons et al. and Haratsch et al., wherein said system teaches the use of the VRML file format, because it is conventional, as defined by the ISO/IEC 14772-1:1997 standard, that the VRML file format is designed to be utilized (transmitted) via the Internet and executed by a browser (remote unit).

24. Claims 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simons et al. (U.S. Patent No. 6, 115, 051) and Haratsch et al. (U.S. Patent No. 6, 154, 222), as applied to claims 1-8, in combination with Pintado et al. (Grafields: Field-Directed Dynamic Splines for Interactive Motion Control).

25. In regards to claim 10 the rationale disclosed in the rejection of claim 1 is incorporated herein. Simons et al. teaches the user defines an initial object property state and a final object property state, such as starting (initial) and ending positions of the object as it travels in the display area. Said user specifics a function Q(u) by manipulating control points of a graphic of the function through a GUI. For example, the function may be of the form of a Bezier curve having associated therewith control points of manipulating the curve between starting and ending property states in the display

state (column 2, lines 53-67, and column 3, lines 1-8). Simons et al. and Haratsch et al. fail to explicitly teach interpolation.

Pintado et al. teaches a motion control system (Grafields) that cheaply combines elements of scripting, smooth motion, dynamics and physical simulation, wherein fields in Grafields are less strictly enforced than in physical models allowing one to specify interesting and nontrivial form of motion: smooth, fairly natural 3D object motion (page 77, column 2 ¶ 3, and page 78, column 1 ¶ 1).

Pintado et al. teaches curves are often defined as a piecewise interpolation or approximation of a set of control point, wherein the curves are stitched together under some continuity constraints at each join between two consecutive segments. Between two consecutive ticks, the curve segment interpolates between the end point of the previous curve segment and a new point that will be the object's position at t_{t+1} (page 78, § 2.1 Overview). It is noted the variable t is representative of time.

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate interpolation as taught by Pintado et al. into the system as taught by Simons et al. and Haratsch et al., because through such an incorporation, wherein interpolation is used to stitch together said consecutive segments, allows for more flexibility in the manner in which a given curve, comprising of a plurality of segment, is manipulated and thus allows for more overall flexibility for motion in a given system which is dictated and controlled by said curve.

26. In regards to claim 11 the rationale disclosed in the rejection of claim 10 is incorporated herein. See column 2, lines 39-53.

27. In regards to claim 12 the rationale disclosed in the rejection of claim 2 is incorporated herein.

28. In regards to claim 13 the rationale disclosed in the rejection of claim 3 is incorporated herein.

29. In regards to claim 14 the rationale disclosed in the rejection of claim 4 is incorporated herein.

30. In regards to claim 15 the rationale disclosed in the rejection of claim 5 is incorporated herein.

31. In regards to claim 16 the rationale disclosed in the rejection of claim 6 is incorporated herein.

32. In regards to claim 17 the rationale disclosed in the rejection of claim 7 is incorporated herein.

33. In regards to claim 18 the rationale disclosed in the rejection of claim 8 is incorporated herein.

34. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simons et al. (U.S. Patent No. 6, 115, 051), Haratsch et al. (U.S. Patent No. 6, 154, 222) and Pintado et al. (Grafields: Field-Directed Dynamic Splines for Interactive Motion Control), as applied to claims 10-18, in combination with VRML International Standard ISO/IEC 14772-1:1997 (http://tecfa.unige.ch/guides/vrml/vrml97/spec/), herein referred to as VRML97.

35. In regards to claim 19 Simons et al., Haratsch et al. and Pintado et al. fail to explicitly teach wherein the specified changes in the scene representation from the

initial value are received from a remote sever. VRML97 teaches VRML is designed to be used on the Internet, intranets, and local client systems (Introduction). The interpretation, execution, and presentation of VRML files will typically be undertaken by a mechanism known as a browser, which displays the shapes and sounds in the scene graph. This presentation is known as a virtual world and is navigated in the browser by a human or mechanical entity, known as a user (Concepts § 4.2.6 Presentation and interaction).

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate the means by which a given VRML file is distributed and executed, as taught by VRLM97, into the system as taught by Simons et al. and Haratsch et al., wherein said system teaches the use of the VRML file format, because it is conventional, as defined by the ISO/IEC 14772-1:1997 standard, that the VRML file format is designed to be utilized (transmitted) via the Internet and executed by a browser (remote unit).

Conclusion

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is as follows: Foley et al. (Computer Graphics: Principles and Practice) teaches a Bezier curve is a cubic function (page 488-491, § 11.2.2); Freedman et al. (U.S. Patent No. 5, 675, 721) teaches the most popular method of sending 3D scenes across the Internet is using the Virtual Reality Modeling Language (VRML). VRML's operating principle is that every object located in a particular scene is described fully by data contained in an ASCII text file. When a user wants to enter this

scene, under current implementation the entire file is transferred en masse over the network to the user's computer at one time. An application program on the user's computer can then access and manipulate the text contained in this file to render the 3D scene.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter-Anthony Pappas whose telephone number is 703-305-8984. The examiner can normally be reached on M-F 10:00am-7:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 703-305-9798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter-Anthony Pappas
Examiner
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